

## WHAT IS CLAIMED IS:

1. A multi-loop oscillator comprising:

first to Nth delay loops, wherein oscillation signal  
5 having a predetermined period is generated by selecting one  
of first to Nth delay loops according to potential variation  
of a supply voltage.

2. The multi-loop oscillator as claimed in claim 1,  
10 further comprising a loop selection section for selecting one  
loop from among the first to the Nth delay loops, according  
to potential variation of the supply voltage.

3. The multi-loop oscillator as claimed in claim 2,  
15 further comprising a supply voltage detection circuit section  
for detecting variation of the supply voltage, and the supply  
voltage detection circuit section controls an operation of  
the loop selection section.

20 4. The multi-loop oscillator as claimed in claim 1,  
wherein a delay time is gradually reduced from the first  
delay loop to the Nth delay loop.

5. The multi-loop oscillator as claimed in claim 4,

wherein the first delay loop is selected and the oscillation signal has a lowest frequency, when the supply voltage exceeds the maximum reference value.

5        6. The multi-loop oscillator as claimed in claim 5, wherein one loop from among the second loops "LOOP2" to the Nth loop "LOOPn" is selected when the supply voltage is less than the maximum reference value.

10       7. The multi-loop oscillator as claimed in claim 6, wherein the Nth loop "LOOPn" is selected when the supply voltage is not exceeding than the minimum reference value.

8. The multi-loop oscillator as claimed in claim 1,  
15 wherein each of the first to the Nth delay loops includes an inverter chain.

9. The multi-loop oscillator as claimed in claim 8,  
wherein the supply voltage is used as a driving voltage of  
20 the inverter chain.

10. A multi-loop oscillator comprising:  
a loop circuit section for forming a plurality of loops  
for generating oscillation signals having different

frequencies in response to an enable signal;

a supply voltage detection circuit section for detecting  
a supply voltage level and generating a plurality of  
selection signals corresponding to the detected supply  
5 voltage level;

a loop selection section for selecting one loop from  
among the plurality of loops in response to the plurality of  
selection signals, and inverting and outputting an input  
signal; and

10 an output section for buffering and outputting an  
oscillation signal of the loop selected by the loop selection  
section.

11. The multi-loop oscillator as claimed in claim 10,  
15 wherein each of the plurality of loops is constructed by an  
inverter chain.